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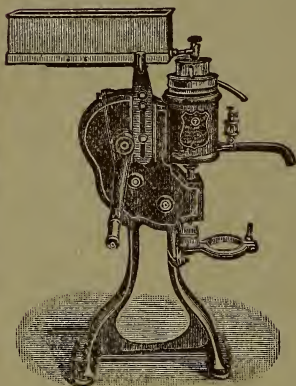
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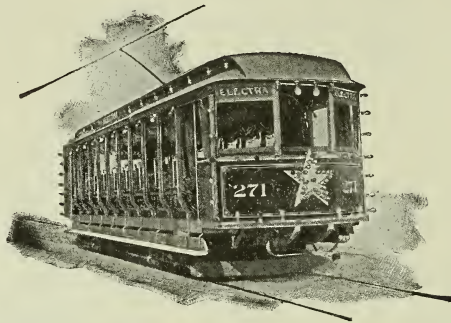
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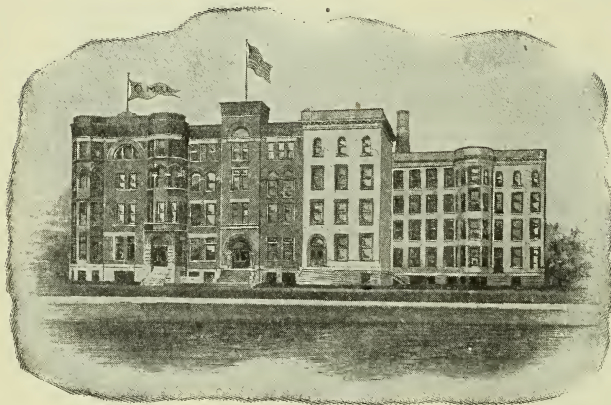
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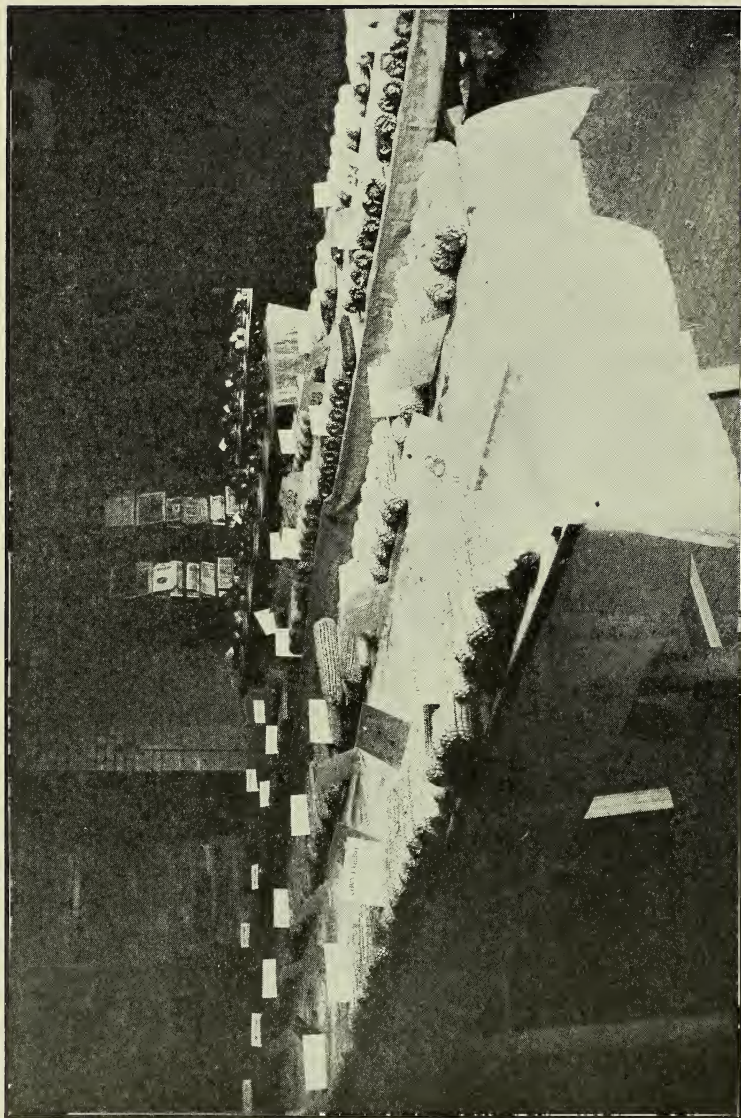
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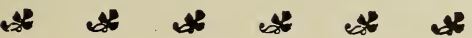
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EDITORIAL CHAT.

This issue of THE STUDENT is devoted largely to the recent State Farmers' Institute, and to the annual meetings of the different Live Stock Associations, and Agricultural Students' Union always held in connection with the Institute. These different meetings are, and should be, of the greatest interest to the farmers of this great commonwealth, as they deal directly with the different phases of their labors, and are all intent upon the same object, namely a betterment of their conditions. The interest annually displayed by many is very gratifying, but there is always a feeling that for a great state, whose greatest industry is agriculture, the meetings are not attended as largely and received as enthusiastically as they should be.

However, the past session of the Institute was a very successful one, and no doubt great benefit was derived from it by all who attended. The speakers were all able men and women who carried their points home, presenting them in a very pleasing manner, and in a way very easy to understand. Subjects discussed were varied, but all up-



on vital phases of the subject of agriculture.

The editor wishes to call attention to certain articles appearing in this issue as bearing directly upon the advancement of certain lines of agriculture, and of agriculture as a whole, in the State of Ohio. First, let me mention the paper of C. B. Stewart, on "Should Ohio Produce Draft Horses?" and Mr. McCartney, associate editor of the *Western Horseman*, on "Breeding the Light Harness Horse." By glancing at the subjects one may at first think that they are to a measure contradictory to each other, but they are not. The two papers simply show the wide field open to breeders of horses in Ohio, and establishes the fact, that money can be made by breeding horses. The matter of success does not lie so much in the fact that they are either "drafters," or "light harness horses," but rather as to whether they are the right kind, having quality, style, breeding, conformation, and other points which go to make up a good horse. Secondly, I would call attention to the paper, "Progress in Agricultural Extension in Rural Schools." This paper is a report of the year's work done by the Agricultural Students' Union in Ohio. It is a form of work which THE STUDENT thinks highly commendable. It is no more than just to ask that the children in country schools, who will to a great measure be the farmers of the coming generation, be given some forms of special work along with the regular work of the school curriculum, which will better fit them for their life work. This paper sets forth a few results of such work tried in some of the schools of the state during the last year. To say that, when tried, it has been a success is expressing it mildly, and it is the earnest hope of all engaged in the work, that it

will continue to advance, interesting the children, the older persons, and all. Such a movement cannot fail to have an elevating influence upon the farming world.

We were impressed the other evening at the meeting of the Ohio Horse Breeders Association, by the assertion of one of the speakers, that it was his earnest belief that the surest, and in fact about the only way that the horses of the state could be improved would be the passage of a state law, requiring that all stallions be inspected by a state official. The effect of such a law would be to remove the "cross roads" stallion, standing at little or nothing, and to introduce a better class of breeding animals. This would work in two ways toward improving the horses of the community. First it would decrease the number of poor individuals by stopping the source from which they come, and secondly, by removing the poorer class of stallions found in many sections, would encourage individuals, or companies to bring in better breeding stock. It is a fact that in many instances in this state, where companies have purchased good horses, they have been compelled to sell them because farmers have failed to patronize them on account of some "scrub" horse standing at a lower fee in the same community. This is the only thing to which some farmers look, and there is no other solution to the problem except to remove by some method, the cause of the disturbance which in this case is none other than the "scrub" kept and used for breeding purposes.

On January 16, the Colorado State College opened its two weeks' course in stock judging. Choice representatives of the various breeds and classes of stock were gotten together, and the instruction was under the direction of the most careful and practical feeders and breeders of the United States.

AGRICULTURAL EXTENSION IN RURAL SCHOOLS.

A Report of Progress by Dean Homer C. Price, before the Agricultural Students' Union.

After the annual meeting of the Students' Union last January at which it was decided that the work of the Union should be divided along two lines, namely, the co-operative experimental work under the direction of the Agricultural Experiment Station and the agricultural extension work under the direction of the Agricultural College of the State University, a sixteen page bulletin was published on "Agricultural Clubs in Rural Schools." The bulletin gave suggestions for organizing agricultural clubs in rural schools and outlined work for them, offering to furnish some materials and seeds for regularly organized clubs to carry on some simple experiments outlined in the bulletin, an addition of 5000 was printed and they were sent to the superintendents of township high schools, agricultural papers and others whom we thought might be interested in the subject.

The bulletin stated in regard to taking up the work that "The first essential in taking up the work is that the teacher shall be in sympathy with the work and will encourage and assist the pupils in their club, and the success of the movement will depend upon the teacher. Pupils are naturally interested in the things with which they are constantly associated and only need the encouragement of their teacher to take up the work enthusiastically. The most ideal condition for the work is to be found in the centralized township schools. Here the pupils of the township are brought together and enough of them, who will be glad to take up the work, can easily be found to form a club. In the district schools of townships having a township superintendent, clubs may be organized as a

township club with members from the different schools. In the district schools, which do not have any township supervision, and this class represents the larger part of the rural schools, clubs may be organized by the teachers and even though they have only four or five members the first year, it will be found that efficient work can be done, and if successful, many more will want to take it up another year."

"In order that the work might be taken up systematically and that there may be some local organization, a simple constitution was proposed as a basis for such an organization. It will be found that the organization of a club will give a distinction to the work and the pupils will take pride in feeling that they are members; it will also systematize the work so that the College of Agriculture can more readily keep in touch with it.

The bulletin then took up the work for the clubs and outlined three experiments in growing plants as follows:

(1). Experiment with Corn.

The college will furnish to each member of the club choosing this experiment, enough field corn of one of the best varieties for the state, to plant two shocks. This is to be planted in the field with other corn so as to test the variety, with the variety being grown on the farm. The teacher can explain to the pupils how to count the rows and plant the corn so that the shocks when cut will stand in the row with the other corn and by planting in this way it will not be mixed with the other corn in cutting and the use of markers for the plot, which are hard to keep up in a corn field, may be avoided.

Record blanks for the members to make record of the date of planting, the

depth, the date it appeared above ground, the date of tasselling, yield, and other data that will teach them to observe will be furnished by the Agricultural College, and these records must be kept and returned to them at the close of the season. This work is especially recommended for boys, but several girls took it last year and were among the most successful with it.

(2). Vegetable Experiments.

The college will furnish to each member of a club taking this experiment the seed of six different kinds of vegetables, as follows: Beets, radishes, lettuce, beans, carrots, and tomatoes.

The lettuce and radishes are quick maturing crops and can be harvested in time to be followed with beans or tomatoes. Where the pupils are near a market, considerable money can be earned from the sale of the vegetables. Record blanks will be furnished with the seeds for a record to be made of the growth and yield of the vegetables and these are to be sent to the college as in the corn experiment at the close of the season. This work is especially suitable for girls, but may be taken by the boys as well.

(3). Experiment with Flowers.

The college will furnish members choosing this experiment seven varieties of flower seeds, consisting of pot marigold, petunia, nasturtium, phlox, candy tuft, portulaca and sweet alyssum, with directions for planting and record blanks as in the other experiments, the latter to be sent to the college at the end of the season.

Members of clubs may choose either the experiment with corn and the experiment with flowers or the experiment with vegetables and the experiment with flowers, but will not be allowed to take the experiment with corn and the experiment with vegetables at the same time.

Arrangements were made with the U. S. Department of Agriculture to furnish the vegetable and flower seeds and they were sent direct to the clubs as they were ordered by us. There was some delay in getting the seed to the clubs early enough and the results were not as satisfactory as they would otherwise have been. The seed corn was sent out from here. I find from our records that vegetable seeds were furnished to 1012 children, flowers to 1261, and corn to 565, a total of 2838. In addition to this we sent out a large amount of litmus paper to test soil for acidity.

When the bulletin was published we did not anticipate having any such demand for the work. There had only been one such a club in the state the previous season, Mr. Graham's club in Clark county, but the good report that had gone out of the work that was done by them, had created a demand for the work in neighboring counties. Although the greatest demand for the work was in the southwestern part of the state where they had heard of Superintendent Graham's work, it was not confined to it. Sixteen clubs with a membership of 664 were regularly organized in ten different counties. Owing to the lateness of getting the bulletin published many children took the work that did not have the opportunity to get organized into a regular club. They were furnished the supplies on the condition that they must regularly organize themselves into a club before supplies would be sent them this coming season.

What has been the result of this work? I believe that the teachers can answer that question better than I can and in sending out the call for the return of the record blanks, I requested the teacher and superintendents whose pupils were taking the work to write me their estimate of the work and ways of improving

it. Space allows me to quote from but one of the replies.

Superintendent Barnes of the Bath Township Schools of Greene county writes: "For the first attempt of the pupils of Bath township, Greene county, Ohio, with the work of the Agricultural Club, I consider it well done.

"With but few exceptions, they manifested a deep interest in the work.

"On account of this being our first attempt, we aimed to move very cautiously. We feel that the work was a success, and we know a larger club of volunteers will await the opportunity of taking up the work next year.

"In the sophomore year of our Bath Township high school, the last half of the year, we use a text on the subject of agriculture—'Burkett, Stevens and Hill.' This will add greatly to the interest in the work, as experiments accompany same.

"Aside from this, our pupils have access to the books, 'Life on the Farm,' 'Agriculture,' by James, together with other good books received through the 'Circulating Library,' on the subject of agriculture.

"The coming season, we hope to rearrange our work somewhat. We hope, as a club, to receive flowers, vegetables and a different kind of corn from your station that we may distribute some in due time.

"Last season, the flowers grown by our girls were beautiful. The vegetables were excellent in quality and produced well."

To show the attitude of the pupils toward this work, we give in full a letter received from Master Elliott Goodfellow an eighth grade pupil, who is president of one of the boys clubs in Springfield township, Clark county, Ohio.

"Dean of the Agricultural Department,
Ohio State University,
Columbus, Ohio.

Dear Sir:

Thinking that you would be glad to know something of the agricultural work of our township schools, I will write you the following notes of interest trying to explain briefly the work done by the boys and girls.

"There were fifty-six boys and fifty-two girls who took active part in the work. A number of the boys took corn of which there were two varieties, namely, 'Pike White' and 'Farmers' Interest.' The season as a whole was very favorable and the quality of corn raised was very fine. Each boy was furnished enough seed of the variety which he took for one shock of twelve hills square. Then he planted besides that one shock of corn of his own choice.

"One peck of potatoes was divided among five boys. The seed potatoes were effected with the scab but a formula wash was used on them before planting and the quality as well as the quantity of potatoes raised was very fine. One boy raised three-fourths of a bushel from eight potatoes.

"Strawberries were furnished four boys. They of course will not mature until next season when the quality can be ascertained. One boy had the misfortune to have his patch destroyed by the moles. The girls and the other boys were furnished with flowers and garden seeds. Some kinds of the flowers were, poppies, nasturtiums, phlox, petunias and lobelia. These flowers were of a fine quality. Some of them did not grow, however, on the account of being planted too deep or some other cause. Those that did grow were quite an ornament to the gardens and developed quite a taste for flowers. The vegetables raised were radishes, beans, beets, carrots, tomatoes and

lettuce. These grew very well and in some instances were exceedingly fine in quality and yielded a financial return.

"Some work in the soil has been done over the township in the way of testing for acid. Very few acid soils were found. It was learned, however, that lime put on acid soil will neutralize it.

"The study of weeds and their names was carried on to some extent. Many different weeds were pressed and some of the pupils became very accurate in naming them.

"A few of the schools have studied insects with great interest and have gathered specimens and have learned the names of different species of butterflies, etc.

"Early in this term many rocks were examined and the names of the most common ones were learned, such as sandstone, limestone, and several kinds of quartz, felspar, hornblende, and others.

"The timber in this township varies greatly in the eastern and western parts. In the eastern part the prevailing timber is oak, while in the western part it is

beech and maple. Many of the scholars have become very familiar with the names of the different trees. A great many leaves have been pressed.

"There have been placed at the disposal of the pupils some of the best books of agriculture such as, 'Our Sky Neighbors,' 'Agriculture for Beginners,' 'Life on the Farm,' 'Bass' Animal and Plant Life,' 'First Principles of Agriculture,' and James' 'Practical Agriculture.'

"The boys of Springfield township have been organized into an Agricultural Club which has held several very interesting meetings. At these meetings, some of the following things were discussed: Soil Building, Effect of Rains on the Soil, Decay and Growth of Plants, etc. We all enjoyed these meetings very much. I am

Very truly,

ELLIOTT GOODFELLOW."

(There are still a limited number of copies of the bulletin, "Agricultural Work in Rural Schools," which will be sent out to interested persons upon application.)



A CAMPUS DRIVE.

HOW TO ORGANIZE A CLUB.

Superintendent, A. B. Graham.

In Ohio there are 1333 school townships; a few more than three hundred are organized and have superintendents; remaining 1000 may have courses of study, but little is done beyond this toward having a system of schools. In the one class of townships the superintendent can very easily organize the township for some simple agricultural work and perpetuate the organization by his efforts to popularize this class of work; in the second class any live, active teacher who can find three or four boys and girls in his own school who he thinks would be interested in this work might organize a little club. It is a fact that there may not be the tie of association of the club members but many a boy or girl may be started on the road to a higher estimation of the work. By all means begin if only one pupil who will do the work can be secured.

In organized townships the superintendent should keep a record showing the names, grade, age, address, and kind of work being done. So far only four kinds of work for which particular direction has been given have been taken up: Corn growing, soil testing for acid, raising of a few varieties of common flowers. The address of each pupil is quite necessary because many suggestions, cautions and notices are necessary to be sent out from time to time. The board of education of Springfield township have so far born this expense; the kind of work entered should be recorded that one may have some means of keeping in line those who need to be encouraged to continue for more than one year in a certain kind of work. Too many changes in the work done at home does not pay. If a pupil chooses to raise corn, he should raise it more than one year. The

superintendent who has a record of his pupils doing this work may the more easily organize the township club and keep in touch with the children and parents.

Very few children below the fourth grade should be encouraged to enter this work. However, we have found that fourth and fifth grade boys and girls keep their records quite as well as those in the upper elementary grades. Each pupil should be impressed with the fact that he is expected to carry the work through with whatever success he can win by hard work and attention and with a seasoning of misfortunes and discouragements; he should be reminded, too, that the work—planting, cultivating, gathering, and *making records*—continues not for a month or two, but for one year. One of the most important things is to have those who will do the work as required.

As soon as the names are recorded, a copy of them should be sent to the Dean of the Agricultural College, Columbus; this copy should show not only the name of the pupil but his age, grade and kind of work to be taken up—corn raising, etc., as already named. In the unorganized townships, there should be added the name of the teacher and the number of the sub-district. If this be done, it makes possible bringing more closely together in interest and purpose a few pupils working independently in the same township.

Since there are many eight-month schools, the list should be made up and sent to Columbus early enough to allow a month or six weeks for those having the work in charge to secure and send you seed, blank records, instruction sheets, etc., in time to distribute before

the school closes. When pupils become scattered after the schools close it is with great difficulty that they are seen to give supplies to. This practical field and garden work has taken on such proportions that the work of supplying nearly 1100 children last year became nearly overwhelming for the limited help at the Agricultural College. It does not pay those who give time to preparing or those who are awaiting to receive seed, etc., if it cannot reach them before the schools close and in good time to plant.

It is not out of place to say at this time that some work of the pupils should be exhibited at one farmers' institute at least. A few of the children should take a minor part of one day or evening program. This work will have much to do with popularizing the movement and with perpetuating the organization. On the 21st of January such an exhibit was made at a farmers' institute held in Springfield; the boys occupied at least one-half the time on the program.

INCIDENTAL WORK.

At school besides having a few up-to-date texts on elementary agriculture for occasional reading by the older pupils, much can be done to acquaint them with the common grasses, weeds, stones which form a basis for soils, what humus

is, nodules on clover roots, the common birds and their economic value, insect pests, insect helpers, common forest trees, etc. Much of this work has been done and can be done by interesting some boy or girl to that degree that much of the time before the school session, part of the recess and noon hour are taken up in seeking information from the teacher concerning whatever may be in the hand of the pupil.

The writer has seen children carrying to school young wheat stalks on which were many small flies; many times, children have brought different kinds of soil, bits of granite showing how freezing and thawing make it crumble.

All work of this nature assists in making children observers and thinkers and adds real interest to the making of records and leads the way to a more intelligent reading of simple books on nature or agriculture.

The manual work already in many city elementary schools finds a similar work winning its way into the rural elementary schools. The manual training high school of the city should find the county agricultural high school providing a technical training for boys and girls expecting to remain on the farm and at the same time meet the entrance requirement of the highest grade agricultural college.



ACROSS THE CAMPUS

BREEDING THE LIGHT HARNESS HORSE AS A BUSINESS PROPOSITION.

JOHN M. McCARTNEY.

(Read before Ohio Horse Breeders Association.)

For some reason, the farmer and the small breeder who engages in the breeding and development of the light harness horse, is usually regarded as a foolish man by his neighbors. If a man engages in the breeding of the light harness horse and fails to succeed, he is held up as an awful example, and the whole business is regarded a rat hole into which money is poured. I will in this paper reverse the rat hole and try to show that the breeding and development of the light harness horse can be made a successful and paying business.

The trouble with many breeders is that they attempt to breed horses on too large a scale, and the expense of development becomes burdensome. No farmer or small breeder should keep over a half dozen mares, and these mares should be made to earn their keep at least by being used for the ordinary work of the farm. I was at one of the largest breeding farms in Indiana a few days ago, and saw some thirty-five brood mares in idleness which could just as well have been doing the work of a score or more of work horses used in the farm work. Because a mare has a good pedigree is no reason why she should be kept in idleness, and the sooner the farmers learn this fact, the better it will be.

Another reason why so many small breeders fail is that they attempt to train and develop their colts. This is a great mistake. The farmer should confine himself to breeding and let the wealthy and professional trainers attend to the training and racing of them. Light harness horses can be bred and kept until they are two and three years old, and can be sold if they are sound and halter

broken for from \$75 to \$150, and occasionally as high as \$1000, in the rough to men looking for racing material. I doubt if cattle can be raised as cheaply or sold for as much money as good two and three-year-old colts will always bring.

In breeding the light harness horse, only good sires should be used. A scrub sire is an expense, even if service to him is absolutely free. There is hardly a community in the State of Ohio, but has one or more good bred stallions, and it is simply a waste of time and money to breed to poor stallions, when a good one is within reach. I am very familiar with the stallions standing for public services in Ohio and I doubt if there is a state in the Union where there are more or better stallions. I could name a score or more of good stallions in Ohio which are worthy the patronage of any breeder in the land, and with all these stallions at their disposal, many farmers persist in using the "cross-road" stallion, and then they denounce the whole trotting horse business because they fail to get a good colt. The scrub sire imparts all of his imperfections to his get, and not one good quality can he give. This is a fact which cannot be disputed.

The first principle of breeding, then, is to use as good bred and shapely mares as possible, and mate these mare with the best bred and most successful sires in reach. It will not always be possible to produce sound and speedy colts, but the percentage of soundness and speed will be greater than where scrub sires and scrub mares are used. It does not pay to use inferior animals for breeding purposes, and no breeder can hope to suc-

ceed who uses this class of animals. There is always demand for trotting bred horses, and right now there is a buyer for every sound useful light harness horse, and I do not suppose, but there is a reader who does not know that buyers are scouring every township in the State of Ohio willing and anxious to buy every horse of marketable age.

The best and most useful horse for all purposes is the American trotter. As a racing machine he is today away ahead of the runner and he has practically driven the hackney from the show ring, and it certainly is a good business proposition to breed a type of horses which are useful, popular and in great demand at all times. The American carriage horse is in demand, and the best carriage type is the trotting bred horse. The farmer and breeder who breeds a type of horse suitable for the carriage and show ring is certain to reap a rich reward. It costs no more to breed a good horse than it does to breed a poor one, and the aim of all breeders should be to breed the good ones. The demand for light harness horses is still firm, and from present indications will continue to be so for several years at least. The average price of horses sold at the public sale in New York in 1904 was \$456, against \$392 and \$364 in 1902 and 1903 respectively. The highest average in a decade was recorded in 1901, when prices averaged \$543, and the preceeding year public sales averaged \$502. In explanation of the high averages of 1900 and 1901 it should be stated that the Abbott sold for \$26,500 during the first named year, and the 1901 sale witnessed the disposal of the stock from the celebrated Bitter Root farm of Marcus Daly and the Suburban farm of W. E. Spier, the joint consignment of two hundred and sixty horses from these two establishments alone yielding an average of \$1000. The average prices obtained

this winter at the sales held in Indianapolis and Chicago the leading horse markets of the West, averaged up fairly well with the New York sales, which is ample proof that the demand is a helpful and healthy one. With a market firmly established, and the light harness horse in the height of his popularity, it is certainly a good business proposition to breed this type of horse.

As to what family of horses is best to use in breeding light harness horses, that is largely a matter of individual opinion, and I will not attempt to point out any family in preference to another. The Wilkes and Electioneer families are both very popular, and the blood of both families has, and will continue to produce a high type of horses, and no mistake can be made in using any of the splendid representatives of those two great families.

In conclusion, let me once more urge upon the breeders of Ohio the importance of using well bred stallions and mares in breeding the light harness horse. This is the real secret of success, and the percentage of failure will be lessened. I congratulate the Ohio Horse Breeders Association over the present outlook for the future of the horse breeding industry of the state. I have, during the past few months, visited many sections of Ohio, and I find not a single note of discouragement. There seems to be a determination upon the part of the breeders to improve and build up, what is now one of the state's leading industries, and your organization is doing a great educational work along the line of improved methods of breeding. For nearly twenty years, I have given my best efforts to the work of creating an interest in the breeding of the light harness horse in Ohio. I have seen the industry grow and develop until there is now at least fifteen million dollars in-

vested in the horse breeding industry in the State of Ohio, and the state now occupies a most commanding position in the horse breeding world. The Ohio Horse Breeders Association should go steadily forward and continue to spread the gospel of sensible and practical methods in breeding.

The Ohio Shorthorn Breeders' Association.

The meeting was called to order in the Neil House parlors Wednesday, Jan. 11, 1905, at 7:30 p. m. An address was given by Prof. Plumb on "Some Observations Among Breeders." He talked mainly on the different ideals men had and the way they gained them. To illustrate, he told of the different classes of buyers at a public sale he attended a short time ago. How with some men the controlling motive is: How cheap; with others, how good.

Wm. A. Martin presented a paper on "The Polled Durham, Past and Present," in which he told the origin and development of this new branch of the old Shorthorn family.

Dr. White gave a talk on "Infectious Abortion in Cattle." This talk was one of the greatest interest to stockmen, especially to cattlemen. He said that in his opinion, the numerous public sales, and live stock exhibitions were responsible for the wide spread occurrence of abortion in our best herds. In treatment he advised the utmost cleanliness thoroughly mixed with brains. Use good disinfectants and plenty of them. Always burn the foetus and all litter when a cow aborts. Great care should be taken with the bull.

The old officers were re-elected and a committee appointed to raise money to make a creditable showing of Shorthorn steers at the State Fair next year.

W. A. MARTIN.

The Agricultural Students' Union.

The annual meeting of the Agricultural Students' Union was held in Townshend Hall and in the University Chapel on January 13. Mr. L. H. Goddard, the Experimentalist of the Union, gave a very interesting report of the work done during the past year. This was followed by the "Report of the Judges on the Corn Exhibit," C. S. Williams. His discussion of the methods of selecting, planting and breeding corn were very interesting and gave much food for thought. Assistant Professor McCall discussed "Plant Breeding," handling his subject in a very clear and concise manner, bringing his points out so as to be easily understood by all.

At the afternoon session, which was held in the Chapel because of the inadequate room in Townshend Hall, Professor Homer C. Price, of O. S. U.; Prof. Craig, of Cornell, and Supt. A. B. Graham spoke on the Agricultural Extension Work.

It will be remembered that at last year's meeting the work of the Union was divided into two parts, that of Experimentation, and that of Agricultural Extension. The work during the year has advanced at a rapid stride, and the good thus accomplished can hardly be overestimated. The increasing interest in the work of the Association is evidenced in the large number of persons in attendance at these yearly meetings. The meeting of the Association has grown to be one of the greatest events of the college year, as regards the College of Agriculture. Its influence throughout the state has likewise increased, and the work which has been done, and which still remains to be done by such an organization, cannot be estimated.

SHOULD THE OHIO FARMER PRODUCE DRAFT HORSES?

C. B. STEWART.

(Read before Ohio Breeders Association.)

A few years ago, the breeding of horses; like every other class of live stock farming, suffered severe financial reverses. Some attributed it to the use of electricity, others to the more natural cause—a surplus of horses. Whatever the cause, the result was characteristic of American foresight. We quit breeding horses. In a few years, the reaction came, and there has been a steady rise in the market value of horses. Now we are going to the extreme again, and our farmers are breeding their mares, some good, others broken down and blemished, either by accident, or due to lack of proper conformation. While the demand for high class horses of the market types will continue to be keen at profitable prices to the producer, we fear that the breeder of the mongrel misfit will soon be heard bemoaning the fact that there is no money in horses—and there isn't in such horses as he raises.

In determining whether it is profitable to produce any class of live stock, we must ask ourselves these questions: Are the climatic conditions of our section suitable to the type of animal we propose to produce? Will the nature of the soil be suitable for our purpose? Can we grow the proper feed? Are the transportation facilities ample for our object? Is there a market demand for the type we propose to produce?

With these questions in mind let us approach the subject which we propose to discuss: Should the Ohio farmer produce draft horses?

As to climate we are very favorably situated. Our winters are not exceedingly cold or long. Our growing season is sufficiently prolonged to furnish every desirable type of vegetation neces-

sary to any form of animal husbandry. Draft horses do not mind cold weather to any great extent. In fact, in this section winter seems to be the best season for conditioning draft horses. This is very noticeable in attending public sales where draft horses are offered. We invariably find the horses in better condition in the spring sales than in the fall sales.

Is our soil right? We can readily conceive how the gamey, moderate sized Morgan horse is the most profitable horse among the granite hills of New England, or of the rough, broken country of some portions of southern Ohio; but for the fertile river plains, and the moderately rolling upland which comprises a vast majority of the acreage of Ohio, the lighter horses of the hilly sections are fairly distanced as an economical source of motive power by mares of the heavy draft class. It does not take a skilled mathematician to figure in whose balance will fall the profit in producing a crop of corn, if our corn farmers attach a 2200 pound team to a 12-inch plow, while his neighbor makes use of three draft horses of the heavy type, attached to a 16-inch plow, or a two gang plow turning 24 inches. I believe that for the majority of our farmers there is more profit in producing heavy draft horses, because mares of this type seem better adapted to doing the heavy work of our farms, and, at the same time, with proper care and good judgment in handling, she will raise a good strong colt each year, and will only lose about two weeks out of the harness just at foaling time.

As to growing the proper feed for the development of the drafter, we can produce everything that is desirable.

It has been our experience that the farmer who places his live stock products on the market, after having grown and developed them from the products of his own soil, and without the aid of commercial feed stuffs, is on the sure road to prosperity, regardless of the tariff, trusts or the money question. Of corn we have plenty. Now, some writers in the agricultural papers will tell you that corn is not fit food for a horse. I have no patience with such cranks. There is no better ration compounded for raising a draft colt than a mixture of corn and oats, equal parts, combined with clover or mixed hay and corn fodder. This ration may not be in strict accordance with theory, but it gives results, and that is what we are working after. Given a colt bred right and made right, a liberal allowance of these feeds, coupled with exercise, pure air and sunlight, and you may expect a horse that will creditably acquit himself in any company.

If we could grow a few roots it would be a profitable addition to the horse's ration. We grow a good many pumpkins, and find that all stock relish them very much. We make it a practice to give the stock of all description free access to salt and ashes. Blue grass is our main dependence during the summer, with sorghum sown thickly broadcast, and then cut and feed green when the pastures fail from drouth.

Electric railways and steam roads make all portions of the state accessible to buyers, as well as afford shipping facilities to any point east or west. But if all the conditions enumerated so far are satisfactory, the demands of the market will be the determining factor.

When a draft gelding a little past thirty-six months old will command \$450 on the Chicago market, it would

seem to indicate that there was not a surplus of these horses obtainable.

Admitting, however, that that is an outside figure commanded only by a very few of the many thousands of horses that find their way to the Dexter Park sale pavilion, still the bulk of the offerings of draft horses has commanded \$175 to \$250, which is quite satisfactory to the producer. There is a very keen demand at present for such horses as these, and a large number of firms, users of heavy draft teams, have their agents out scouring the markets and the country, and even Europe, for horses that meet their requirements. The horse is the first consideration; the price is secondary. The greatest trouble is that during the period of depression many of our farmers disposed of their good, high grade draft mares, many of them being taken for export. Now we have a scarcity of mares suitable for producing the kind of a horse that is in demand.

Any farmer of consequence can afford to own a pair of pure bred draft mares, of at least high grades, that will more than pay their way in work on the farm, and, if bred to the right kind of a stallion, will produce a pair of valuable colts each year. These same colts will go to work the spring they are three years old, and much more than pay the total cost of rearing them. At six years old they are ready for market, and will yield a handsome profit to the producer, for there is never a surplus of the really good ones.

Another great drawback in the business is the dearth of really good breeding stallions. In my immediate neighborhood there is not a single good, first-class draft stallion, to my knowledge, within a radius of ten miles. There are several reasons for this. For instance, a few years ago an agent for an im-

porting firm came into the neighborhood and organized a company of farmers, twenty-five of them, who put in \$100 each, and purchased a horse of the firm which the agent represented—\$2500 for a horse that would have been dear at \$500. The horse did not prove a good foal getter, and after a few years of wrangling and dissatisfaction among the shareholders the horse was sold at public auction for \$90. Now, this is not an extreme or unusual case, as I personally know of three such cases within the circle of my acquaintance. Such business methods are calculated to injure rather than help the horse-breeding industry. The common result is that farmers are shy of these high-priced horses, and they breed their mares to the home stallions at a less fee, and produce a horse for which there is no market demand. Let importers and stallion breeders offer our farmers good stallions at a reasonable price, and in a few years the Ohio farmer will produce as high a type of market horse as his brother in any state.

A Few Thoughts on Sheep Feeding in Ontario.

Until about the middle of December, Ontario flocks usually have a free range of the fields, rape used in connection with clover and timothy pastures, furnishing an abundant supply of forage. When the hard frosts come late in the fall, the breeding ewes are often brought to the barns over night and fed a small allowance of pulped roots and clover hay. The sheep gather at the bars of the pasture at the accustomed hour, and the shepherd finds them more than willing to go home to get this little extra feed. It is better for them as well, than that they should be forced to eat the hard frozen grass and clover in the morning. The lambs have to be shut off the rape and some-

times off the clover at night to prevent scouring; and even then the late fall is rather an anxious time to the man who has a large flock of lambs.

But when the first heavy snow comes all the sheep go to the yards, the ewe lambs and ram lambs going to separate pens, and in large flocks the breeding ewes are often divided—the thinner and older ones being placed by themselves, that they may receive a little extra feed and attention. Clover and alfalfa hay, roots, oats and bran are chiefly relied upon by Ontario shepherds to bring their sheep through the winter. Where peas are grown, pea straw is used once a day in place of clover, usually for the morning feed. The best clover hay grown on the farm is reserved for the sheep for winter feed. As exercise is an almost impracticable thing in the depth of winter, food and management must be adapted to counteract any evil tendencies of the somewhat unnatural confinement. Succulent fodder in some form is almost indispensable and it can be supplied in no better form than in the shape of roots. Fed pulped, they are keenly relished by sheep and serve to keep the edge on their appetite by introducing variety in an otherwise dry ration. They are very digestible and are consequently useful with young stock. Further, they supply the animal with water in a form least injurious to it in cold weather. They have also a beneficial influence on the digestive tract, serving to keep the bowels open and are especially useful with breeding ewes, in tending to prevent constipation in lambs. About 4-7 lbs. of swede turnips are fed per day to each usually fed in two feeds, one just a little after day-break in the morning and the other about 4:00 or 4:30 at night, and just as much at each feed as will be eaten up clean.

As regards grain, very little is fed. It is the aim to have the sheep come in in December in such condition that they will need very little grain during the early part of the winter. The ram lambs however are usually the favored ones and frequently get a little grain at noon all through the winter. The thinner ewes also often get a few light oats at noon.

Towards lambing time, a small allowance of oats and bran is given to all the ewes. The vitality tends to run a little low at this period and oats and bran serve well to keep the animals in good heart at this season. After lambing they receive a larger allowance of grain and rather more liberal feeds of turnips and hay. All through the winter it has simply been the aim to keep the ewes in a thriving condition and not fat; but after lambing, good mothers and good milkers are able to stand more liberal feeding. At from three to four weeks old, the young lambs are provided with a small pen for themselves, to which they gain access through a creep hurdle and in which is kept a small supply of fresh hay, fresh roots and a little whole oats and bran. The youngsters soon learn to come regularly to the trough at feeding time, and it is a pleasure to see the little fellows grow under your hand as the warmer weather approaches in the spring.

It will be inferred from the above statements that the sheep are in no measure pampered even in the coldest weather. The sheds open only on the sheltered side but the doors are never shut and the sheep have full access to the yards at all times. They are even feed their turnips and grain out of doors to get them into the habit of coming outside. Frequently on mild nights and sometimes during a gentle snow storm, the whole flock will have been found to have lain out in the open. Only during the breeding season and with newly shorn animals is the flock closed in at night. Such treatment makes hardy, healthy sheep and insures strong, vigorous lambs.

As soon as the land is dry enough in the spring, the ewes and lambs are allowed a run in a nearby field in the day time. They are brought in in the evening however for some little time, and fed night and morning. But as soon as the grass has hardened a little and the nights have become a little warmer, they are no longer brought in and are then allowed to shift for themselves. Possibly a little grain may be offered the lambs for a little while on the pasture, but they soon forget to come to the trough and it seems then a useless practice. With the emptying of sheep barns the shepherd's duties are lightened and whether from habit or necessity he usually hitches up his team and goes out to plough.



STUDENTS JUDGING SHEEP.

THE IOWA AGRICULTURAL COLLEGE.

Some Impressions—C. S. Plumb.

The town of Ames, Iowa, is located on the Chicago and Northwestern railroad, about 325 miles west of Chicago. The journey across Illinois is through some of the best farming country in America, while further westward, beyond the Mississippi, the fertile fields of Iowa stretch away in slight rolls or level prairie.

Ames is a very common place, little prairie town, with one main business street of importance and numerous cheap frame residences lacking both beauty and character. Nearly two miles west of the town lies the college on a fine estate of 840 acres. Connecting the town and college is a railway owned by local stockholders, over which little abbreviated locomotives haul passenger coaches built many moons ago, and which I judge have seen neither paint nor polish since the day they came forth from the shop. The whole system belongs properly to a museum collection in railway engineering.

The Agricultural and Mechanical College is one of considerable distinction. In summer the large campus of 120 acres must be very beautiful. The buildings are grouped much after the plan of O. S. U., though as a whole they are hardly so imposing as yet, as those on our campus. The Engineering Hall is a very beautiful stone structure, claimed to be the finest in America of its kind. A new Administration Hall, to cost about \$400,000, complete and equipped, is in process of construction, as is also a \$50,000 dairy building. A new Agricultural Hall, to cost \$250,000, will be started next spring. The great cost of these buildings is largely due to the fact that they are fireproof in construction.

There are also two barns of brick and two judging pavilions. The horse barn

cost \$10,000, while the new station barn and annexed judging pavilion cost \$30,000. These are of most substantial construction, and contain many modern improvements. The largest judging pavilion seats about 250 comfortably, is octagonal in form, and has an arena about 60 feet in diameter between the seats, which are arranged in amphitheatre style. There is a second story where classes are conducted in corn judging. Near the horse barn is a modern judging pavilion, which is used for the smaller classes.

Besides these buildings, the college has an old modern barn of considerable capacity, in the sub-basement of which are very comfortable box stalls and common stalls for cattle. There is also an inexpensive yet very convenient sheep building.

My visit was during the short winter course in livestock husbandry and corn judging, and between 500 and 600 young men and women were in attendance, more or less, for the two weeks.

The college at this time has a month's vacation for the regular students, which easily allows for caring for these short course persons.

Each student has a busy time of it, beginning at 8 a. m., and attending classes until noon. At 1 p. m. the work resumes and continues until 5 p. m. At 7:30 those who desire assemble in chapel where lectures are delivered and other entertainment is offered. In Animal Husbandry, each student has six opportunities of two hours each to be present in the classroom when horses for example are being considered. The same applies to cattle or other stock. The instructor lectures and discusses the animal form or function, then the student may score or write up a group, after

which the instructor discusses the subject or subjects judged. There is great interest in the work and much enthusiasm among the students, who range in age from young men in knee breeches to men with white hair, as well as about a dozen young ladies. The college has a great deal of stock of its own, and this winter has had loaned it for class work some of the best specimens of horses and cattle obtainable in America. For example, McLaughlin Bros., of Columbus, loaned the use of nine magnificent horses of four breeds, paying the transportation in express car from Columbus to Ames and return, that the students might use their horses.

The college owns a large herd of cattle. There were some very beautiful blue-grey steers, the results of breeding a white Shorthorn bull to about 50 pure bred Galloway cows. These were in experimental feeding, but the students also made use of them in class work. There were Hereford, Shorthorn, Aberdeen Angus, Red Poll, Holstein, Friesian and Jersey cattle at the barn, among which were some excellent individuals, and as might naturally be expected, some not so good. The college the past year lost by death two valuable Shorthorn bulls, one of which, "Scotland Crown," imported from the herd of Wm. Duthie in Scotland, died during International week at Chicago. The white Shorthorn, "Dr. White," the sire of the blue-greys, died in the summer, but he proved himself a valuable breeder in his limited time. In looking over this herd one is impressed with the fact that beef cattle are receiving far more consideration here than are the dairy breeds. Recently the college received 50 range Hereford steer calves, that promise to make an attractive lot of feeders from which some good stuff may go to the International in future.

There are a number of breeds of sheep on the farm, and these are represented by some very excellent breeding ewes. The number of swine was reduced at the time of my visit, but some fair specimens were to be seen. Several exceptional barrows, including the grand champion of the last International, and bred by the college, were used in the classes.

Iowa is unquestionably doing a great work in her Agricultural College. She is reaching the people in a way which commands their cordial support. There are many earnest instructors and willing students at Ames. A strong spirit of progress and enthusiasm seems to prevail on every hand.

And yet, I see no reason to think that other colleges less advertised than the Iowa college, are not doing valuable work. Wisconsin, Minnesota, Iowa and Ohio are all large institutions with many agricultural students. Each institution is working out its problem in its own way, and it does not follow that the methods pursued in one state are best for the other. Ohio at present lacks the great equipment of the other three, so far as agriculture goes, but we are making history rapidly here, and no doubt in a comparatively short time the facilities for agricultural education at the Ohio State University will compare most favorably with the other leading states. We are not prepared to do some of the work done elsewhere, but we are prepared and are doing some things in the light of our knowledge, that from the very nature of things must be of great value to the youth of Ohio.

Professor Willet M. Hays, who holds the chair of Agriculture in the University of Minnesota, has been appointed Assistant Secretary of Agriculture.

The Morgan Horse.

Very recently there has been a great deal of interest manifested in the Morgan horse. During their "boom," some sixty years ago, Morgan horses were sent to all parts of the country; and then came their stand-still. It is because of this renewal of interest that I shall make these remarks.

There has been a great deal of controversy, and is at present much uncertainty as to the correct ancestry of Justin Morgan. We do know that on his sire's side he was a lineal descendant of King Herod, and King Herod's lineage traces back to Byerly Turk. Also that today there is more of the original Arabian blood contained in this family than in any other American breed. His dam is said to have been of the Wildair stock. Other authorities refer her to the common Vermont stock. Still others say that she was of Canadian blood. Whatever the truth be, we do know that there must have been blood back somewhere or the uniform, beautiful type would not have been transmitted to offspring so regularly. Also that Justin Morgan was the founder of the remarkable breed of horses which, for so many years, were sought for at high prices and which made fortunes for their breeders.

Justin Morgan, born in 1793, and founder of the oldest trotting family, was a chunky, short-legged horse fourteen hands high and weighing something less than a thousand pounds. His color was dark bay with black points; mane and tail heavy and coarse; head good, not so very small but lean, face straight, broad forehead and delicate ears set wide apart. Probably his most noticeable points were his back and legs the latter short, thin and broad, shoulder and thigh bones very long and oblique; loins exceedingly broad and muscular. His barrel was rather long, round and deep and

close-ribbed up; chest deep and wide with breast bone projecting forward. And considering his size he was a remarkably well muscled horse. He was not a trotter but a fleet runner for short distances; and it was not until the advent of his grandson, Blackhawk, that a trotter did occur.

Blackhawk, record 2-42, or Vermont Blackhawk, as he was generally called, was the greatest of all the grandsons of Justin Morgan. He was a great roadster and, while a very handsome trotter and sire of many good trotters, yet had he stopped there he could hardly have been called a great sire. The trotting blood was beginning in him and was to develop in his progeny which it did rapidly. This trotting blood received reinforcement at every stage and the success of the family is largely due to this fact.

Since there have been many Morgan trotters as Ethan Allen, record 2-15; Gen. Knox, 2-24; and his daughter, Lady Maud, 2-18 $\frac{1}{4}$; Daniel Lambert, Winthrop Morrill, Golddust and daughter Lucille Golddust, 2-16 $\frac{1}{4}$. I have mentioned only a few, but there are many others worthy of note.

We notice that during the early history of this breed no speed horses were produced, being mostly what were called roadsters. But the breeders soon turned their attention toward speed, sacrificing beauty, size and everything else for speed. Justin Morgan was hardly the ideal type of trotting horse, being what we would call a "big little horse," so that in the craze for speed this admirable type was nearly lost in crossing with the Hambletonian, the rough Mambrino and others. This continued for nearly half a century. But within comparatively recent times the Morgan horse breeders have come to realize the value of beauty and utility over speed and have turned their attention toward the reclaiming of

the Morgan horse for what he really is: a roadster with marked intelligence, beauty of conformation, snappy style, cheerful, honest disposition, "bottom" and great breeding.

We are happy to say that these characteristics were not entirely lost in the reckless race for speed and that there are some people who can still value this little horse rightly. Since the craze for Morgan horses many years ago, and following, a period of dullness, the Morgan horse has held his own and is today steadily gaining ground.

Probably the purest blood will be found back in their native state Vermont, where they have been bred pure ever since their origin. It was from a stud in this state, owned by F. G. Chandler, that Knox Morgan came; first in the aged stallion class and champion at St. Louis. He is now thirteen years old and traces back both on his sire and dam's side to old Justin Morgan. Here is a well bred stallion of the original Morgan blood descended through many generations of famous sires. He possesses what few of the early horses of this breed possessed, namely size.

Mr. Chandler, who is a pioneer Morgan horse breeder has, through the ups and downs of this breed and finally the "ups" once more, kept out all alien blood and at the same time bred for size, beauty and utility and not alone for speed. And happy is the breeder who has quietly followed along the same plan because of the pleasure which he has enjoyed in the past and the profits that may well be looked for in the future.

C. D. HYATT.

The Ohio Horse Breeders' Association.

The Ohio Horse Breeders' Association held their annual meeting in Townshend Hall during the State Institute week. At the election of officers for the

coming year the same board was re-elected with the exception of Vice-President, Mr. R. W. Dunlap being elected to that position. Various phases of the horse-breeding industry were discussed, both from the standpoint of the breeder of draft horses, and of light harness horses.

The papers presented by Mr. C. B. Stewart and Mr. McCartney appear in another column of THE STUDENT. The standpoint of the importer was given by Mr. J. B. McLaughlin of Columbus. He spoke of the difference of cost in producing horses in this country and in Europe, and said that nowhere could better horses be raised than in Ohio, and nowhere as cheaply.

Dr. White of the Veterinary Department expressed his desire for the passage of a state law requiring the inspection of all breeding stallions by a state official. A measure of this kind would be no more than just to the raiser of good horses, while there is no doubt but that the horse-breeding industry would be greatly benefited by such a law.

General Agricultural News.

The work of construction has been begun on the new Agricultural Hall of the Virginia College of Agriculture. This is to be a fine and commodious building, well lighted, and when finished will be thoroughly equipped for both instruction and research work.

Since the plans and specifications have been formulated by the engineering department of the institution, and the general construction will be of the natural limestone rock obtained in quarries adjacent to the college, while the trimmings will be of Brush Mountain sandstone, the structure will be entirely the product of Virginia soil and ingenuity, and will stand for new ideals in agricultural education in Virginia.

On October 1, 1904, in Morrow County, Ohio, was organized the first forestry association in this state. It is known as the Morrow County Forestry Association and numbers among its members some of the most progressive and influential men of the county, with Gus S. Brown as its President.

But little is generally known about forestry work and this organization is one whose aim is to become informed along such lines, and its example is one worthy of commendation.

The Ohio Farmer of January 14, 1905, contains an interesting article by W. I. Chamberlin. It is a financial statement of the incomes and expenses, incident to the running of his farm during the year 1904, and it also contains the gross and net incomes from his farm and orchard for each of the last ten years.

The average yearly net income of the farm for the past ten years is \$1254, or 12½ per cent, on the \$10,000 invested, and of the orchard is \$756, or 75.6 per cent. on a valuation of \$1000 for the ten acres or 400 full-bearing trees.

University News.

On Friday evening, Jan. 13, the O. S. U. girls basketball team defeated the Marion high school team by a score of 14 to 2. There was a large crowd in attendance, which showed much enthusiasm over the outcome of the game. Basketball is fast becoming popular at the University, and is worthy the support of the student body.

* * *

The University Glee and Mandolin Club gave a concert at Lancaster on January 20. All reports name it quite a success. The clubs will probably make a tour of the state during the spring vacation.

The students are jubilant over the strength displayed by this year's basketball team. On January 7, they met and defeated Wittenberg by a score of 65 to 8. In this game they outclassed their opponents in every particular. On the evening of Thursday, January 12, they brought glory to themselves and to the institution by meeting and defeating the strong Wisconsin team, by a score of 25 to 22. The game was one of the prettiest exhibitions of basketball ever given in the O. S. U. gymnasium, and much credit is due to the team and also to Coach Sweetland for winning the event. The game was close and exciting throughout. An exceptionally large crowd was present.

* * *

The Strollers made their initial appearance for the year, in the University Chapel, on January 6, presenting Goldsmith's "She Stoops to Conquer." The play met with well deserved success, all present greatly enjoying the occasion. All members deserve much credit, but especial mention may be given to Messrs. Armbruster, Kimball, Nye and Fromme, and to Miss Poste and Miss Barnhill.

* * *

Mr. Charles R. Dils, '04, one of the numerous veterinary students, who have recently won laurels on the football team, has received an appointment in the government Philippine service at a salary of \$1600 a year.

* * *

At a recent meeting of the Athletic Board, the constitution of the Athletic Association was so amended, as to make only students, alumni, and members of the faculty holding term tickets, members of the association. This is a move in the right direction, placing the persons directly interested in such matters, in control of the association. The price of the term tickets is \$2.00 for fall term and \$1.00 each for the winter and spring

terms. The tickets admit their holders to all events held under the auspices of the Athletic Board. It is hoped by this plan to increase interest in all athletic events.

* * *

Prof. C. S. Plumb spent the early part of January at Iowa Agricultural and Mechanical College at Ames, Iowa. He was making a study of the work done in the two weeks' course in corn and stock judging offered to the farmers of that state by the Agricultural College. Dr. Thompson at the same time made a trip visiting the Agricultural Colleges of Wisconsin, Minnesota and Iowa.

* * *

This year's Makio will be edited upon a different plan than that adopted in former years. Only the number of copies sold will be printed. Subscription blanks in the hands of the members of the board are being filled out, and unless 600 are ordered, there will be no Makio, as this is the number that must be sold in order not to mean indebtedness.

Alumni Notes.

The week of January 10-14 was reunion week for many of the alumni. The State Farmers' Institute followed by the meeting of the State Board, and this by the Student Union meeting drew many to the city.

At the election of the Agricultural Student Union, John F. Cunningham, '97, was chosen President; M. O. Bugby, '04, Vice-President, and A. G. McCall, '00, Secretary-Treasurer.

* * *

H. A. Clark, '02, has left the government employment and taken up practical farming near Medina, Ohio.

* * *

M. O. Bugby, '04, of Kingsville, is greatly interested in swine industry. He is quite enthusiastic in the work, having made some very successful gains with

a bunch of hogs which he is now feeding.

* * *

Theo. Ditto, '03, formerly connected with the bank at Elida, has severed his connections there. He is now engaged in farming near Delphos, and reports good success.

* * *

C. B. Stewart, '00, a successful stock breeder of Canal Winchester, read a paper before the Horse Breeders' Association meeting held in Townshend Hall, January 18.

* * *

A. G. Abbott, '99, R. F. Smith and L. B. Palmer were in attendance at the Student Union meeting. Mr. Palmer is a successful breeder and raiser of Shropshire sheep.

* * *

J. H. Jefferson of Madison Mills, O., attended the different agricultural meetings last week and was also a welcomed caller on many old friends.

Dairy Notes.

This year's Special Dairy Class is composed of twenty-seven students, of which three are ladies. They are the first ladies to have been enrolled in this department. They are Miss Olivia Cleveland of Cincinnati, who operates a dairy farm of 200 acres just across the river in Kentucky; Miss Francis John, who will conduct the work on the dairy farm, owned by Dr. Grant Youmans of this city, the farm being located at Elmwood, eight miles north of the University, and Mrs. Gross.

A Swiss cheese kettle has been loaned to the Dairy Department by the Diamond Cheese Company of Erie County. Mr. C. W. Bowman, Swiss cheese maker employed by the above company, and a graduate of the Dairy School, has been employed as assistant in the cheese room. There are over

one hundred Swiss cheese factories in Ohio, and it is hoped that this class of dairying may be benefited.

The new refrigerating apparatus was placed in operation during the week of January 23. The result was very satisfactory, and it is a great addition to the efficiency of the dairy work.

The Ohio Dairymen's Association has been granted an emergency appropriation of \$850 by the State Emergency Board. The annual meeting will probably be held in Salem, sometime in February. There will probably be two other meetings held in the Western Reserve at the same time, with other meetings to follow later. Definite announcements of the date will be made as soon as local arrangements are completed.

Mr. E. D. Holl, who has been in charge of the creamery at New Washington, Ohio, has again returned to the O. S. U., where he will continue his course of study.

New Books.

VEGETABLE GARDENING, by Samuel B. Green, Professor of Horticulture in University of Minnesota. Revised edition. The Webb Publishing Co., St. Paul, Minnesota.

Perhaps no book on the subject is better known at the present time. It is well arranged, clear and concise, equally well adapted to the practical gardener or the horticultural student. This sixth revised edition brings the subject matter up to date to 1904.

THE FEEDING AND MANAGEMENT OF LIVE STOCK, by Thomas Shaw, Professor of Animal Husbandry in the University of Minnesota. By Webb Publishing Co., St. Paul, Minn.

To one who has followed recent agricultural literature the book needs no recommendation other than that it is from the pen of Mr. Shaw. Already in the second edition, the book is having a large sale. The compact and logical ar-

range ment places a large amount of knowledge within easy reach and in a small space.

THE GOVERNMENT OF OHIO, by Prof. Wilbur H. Siebert, Professor of European History in the Ohio State University; author of "The Underground Railroad from Slavery to Freedom." Published by The MacMillan Co.

This volume deals with the history and government of the first state carved from the old Northwest Territory. The story of the discovery and settlement of the Ohio country, the establishment of the first territorial government, and the evolution of both the state and local governments are clearly traced and presented in a concise and pleasing style. The present organization of the commonwealth and the various departments and phases of its administration are also treated in a comprehensive and authoritative manner. Lists of references, maps, illustrative material, tables, etc., add to the interest of the book.



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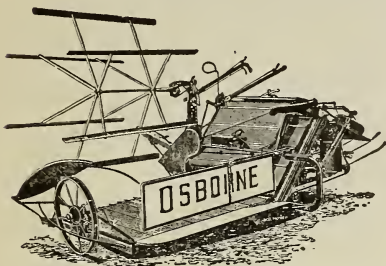
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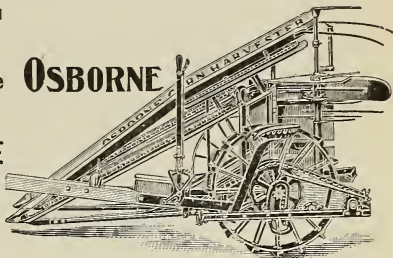


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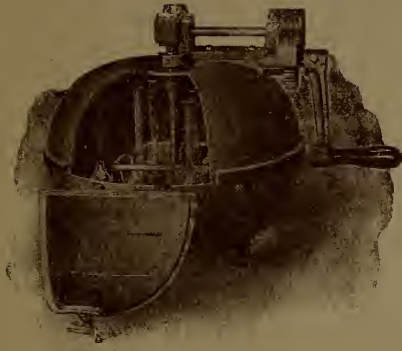
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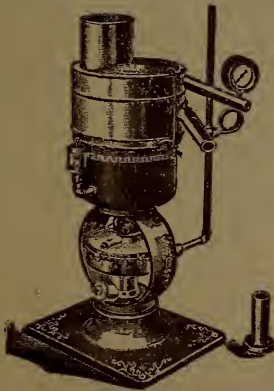


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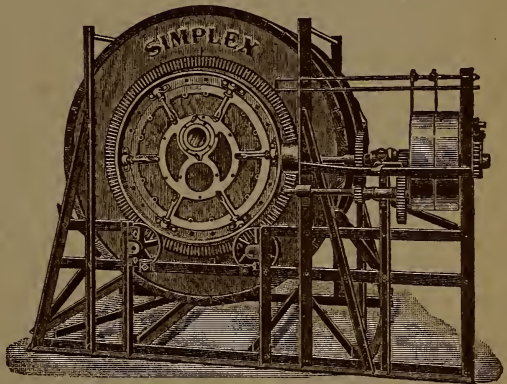
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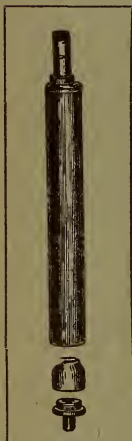
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